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# CURRENT METHODS OF TEACHING HANDWRITING

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## III<sup>1</sup>

*Type of movement.*—We turn now to the question of the type of movement and forms of drill which are used. It was stated in the early part of the discussion that the emphasis is very commonly laid upon the arm movement. As the arm movement component in the writing movement this component is variously described as “the fore-arm movement,” “the muscular movement,” or merely “the arm movement.” None of these designations correctly describe the movement in question. The term “muscular movement” which is most commonly used is obviously a misnomer. The writer suggests that the most accurate designation is one which has been employed by McAllister, namely, “Arm movement with rest.” This indicates that the movement is made by the whole arm moving from the shoulder, which is the case, and that the arm is not suspended, but rests upon the desk.

The majority of systems which are in use emphasize this arm movement with rest to a greater or less extent. The distinctions in current practice are two. The first distinction consists in the alternative between an exclusive arm movement and a movement which combines the arm and the fingers. Several writers insist upon entire exclusion of the finger component of the writing movement. The Palmer method perhaps represents most completely this attitude. Other systems defend the writing movement as most advantageous, which is a combination of the movements of the arm, hand, and fingers. This type of writing is recommended, for example, in the Bennett system, the California series, Spencer’s Practical writing and the Whitehouse system. The movement of the hand about the wrist joint is ordinarily not mentioned, but when it is, it is for the purpose of condemning it.

<sup>1</sup>This article concludes the series begun in May and continued in June in the *Elementary School Teacher*.

The issue which is here raised has been discussed in a previous article in the present journal. It is not, therefore, necessary to consider it at length, but it will be sufficient to cite some authorities who favor the combined movement and to indicate briefly the function which the various component movements take in the combined movement. The only attempt at a scientific analysis of the writing movement, with reference to the part played by the fingers and the arm, has been made by Charles H. Judd. The report of this investigation may be found in *Genetic Psychology for Teachers*, chap. vi. The summary of the results which were found in this investigation may be stated in the words of the author:

The general conclusion from a comparison of the large number of records of which the three reproduced represent the chief types, may be summed up briefly in the statement: In ordinary writing the fine formative movements are executed by the fingers; the movements which carry the fingers forward are executed by the hand or arm; and the pauses between groups of letters are utilized for long forward arm movements which bring the hand back into an easy working position (pp. 176, 177).

In the same place the author describes the type of writing which is characteristic of those who use predominantly the arm movement in the formation of letters:

This writing is typical of a whole group of cases in which the movement is coarse, and more generally in which much less attention is given by the writer to questions of form.

We have here indicated a relation between movement and the form of writing which is somewhat different from that described in the quotation above given in the discussion of this question.

Another quotation from a prominent handwriting expert upholds the same position:

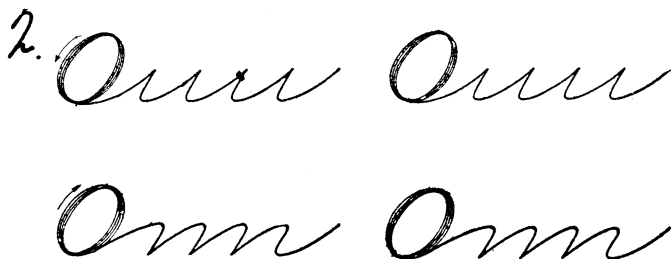
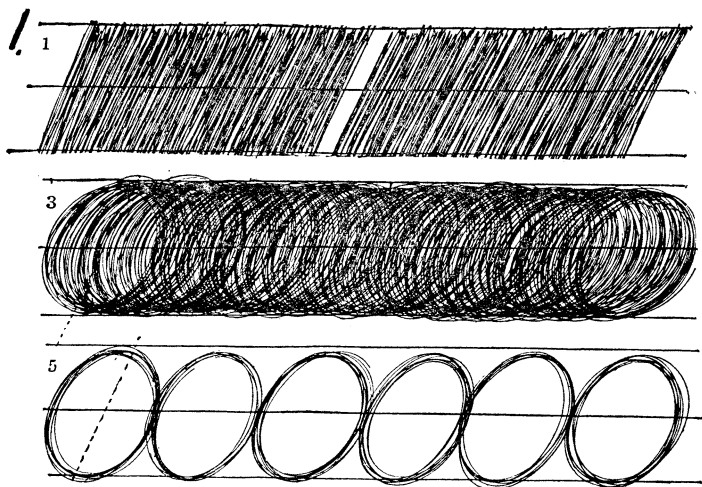
It is possible to write entirely with the fore-arm movement without any separate action of the hand and fingers, and many superior penmen write in this manner. But the easiest, most rapid, and most perfect writing is that produced with the fore-arm movement used in connection with a slight action of the hand and fingers by which the small portions of the writing are produced.<sup>1</sup>

If one may venture a prediction it is that the more moderate procedure which recognizes the value and place of the movements of the fingers and the hand in the production of the letters will finally prevail against the extreme position taken by the advocates of the exclusive arm movement.

<sup>1</sup> A. S. Osborn, *Questioned Documents*, p. 108.

A second distinction in relation to this question is that between the practice which involves the use of the same type of movement through the grades, and the practice which allows a somewhat different form of movement in the earlier grades from that which is to be ultimately developed. All of the more moderate writers upon penmanship allow the child in the primary grades to use a movement which is described by one as "the relaxed finger movement," or by another as "the easy finger movement." There is a general agreement upon the evil of the cramped type of movement which was so characteristic of the writing in the earlier grades in the old days when the copy-book was not supplemented by any other means of teaching. This cramped movement is generally avoided by allowing the child at the beginning to write upon the blackboard and to make the transition to the ordinary sized writing upon paper by gradual steps. These steps include the use of crayon or large lead pencil and large sheets of rather rough paper throughout perhaps the first grade. In the second grade the paper may be reduced gradually to the ordinary size and the writing may likewise be reduced to the same extent. In this form of procedure the child is encouraged to write at first with much the same movement which he uses at the blackboard. This involves the arm movement without rest chiefly. As the child comes to write smaller and to use the finger movement more he tends to retain the same freedom which he has previously possessed. When he then comes in the third, fourth, or fifth grade to learn the arm movement with rest, in which the arm oscillates upon the muscle pad of the fore-arm, he is not required to make a complete transformation of his movement, but only to add to it a type of movement which he had not before acquired, and to co-ordinate it with the movements which he previously made.

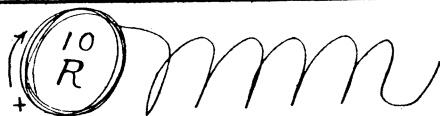
This description represents the practice which is found in some systems which have studied most closely the psychology and pedagogy of writing, and in the opinion of the writer is the best method of developing the process. The introduction of the fore-arm movement with rest marks an advance to a much more accurate and finely adjusted writing movement, and should, therefore, be deferred until the child has already acquired some facility



3. *This exercise was done with the Forearm Movement. Notice the smooth lines.*



*The right circle (R) with the Forearm Movement.*



*The "x" indicates the starting point.*

FIG. 5.—Illustrations of formal movement drills. 1. From the Palmer Primary cards for Grade II. These are also used with single spacing. 2. From the Economy system for Grade V. 3. From the *Whitehouse Copybooks* for Grade I. (Reproduced with the permission of the publishers.)

in the less exact use of the pencil, and until he has reached the stage in his development when he is capable of acquiring with facility a high degree of skill.

*Movement drills.*—We may now briefly review the types of drill which are used to secure the best form of writing movement. Certain drills are used pretty universally and the differences which exist are chiefly in matters of detail. We may distinguish in general two types of drill, one which is purely formal, and the other which is used in connection with the actual production of letters. Of the purely formal drills the most frequently used are the retraced oval

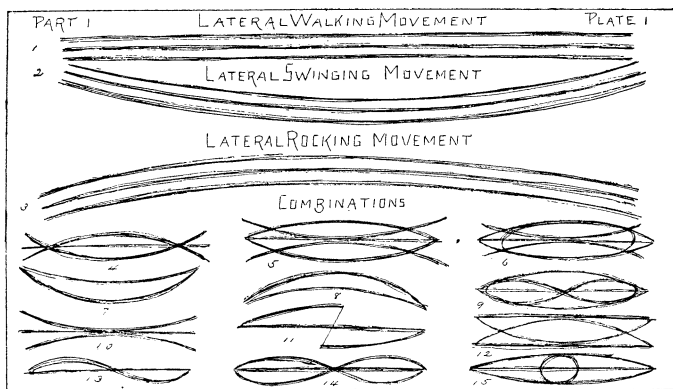


FIG. 6.—Illustrations of the lateral movement drills as used in the Bennett system. Reduced to one-half size. (Reproduced with the permission of the publisher.)

in both directions, the straight up-and-down stroke, and the retraced horizontal stroke. The continuous, progressive oval may be looked upon as a modification of the retraced oval. Somewhat less frequently used forms of drill are the continuous “m” stroke, “u” stroke, and “l” stroke (see Fig. 5). The aim of these drills is evidently to give the pupil practice in the use of the arm movement in the production of the letters.

Another type of drill is particularly directed toward the development of the arm component in carrying the hand along the line while the letters may be produced by the finger and the hand. This type of drill has been particularly developed in the Bennett method (see Fig. 6). This method in fact excludes entirely the

oval and the up-and-down drills. The drills which are included in this method are the back-and-forth horizontal stroke, the so-called swinging and rocking stroke, and the development of the "i" and the "n" out of a combination of these strokes with an intervening downward stroke. This forward-and-backward movement is used even in the development of the letters themselves, as well as in the movement between the letters. Thus "a" is

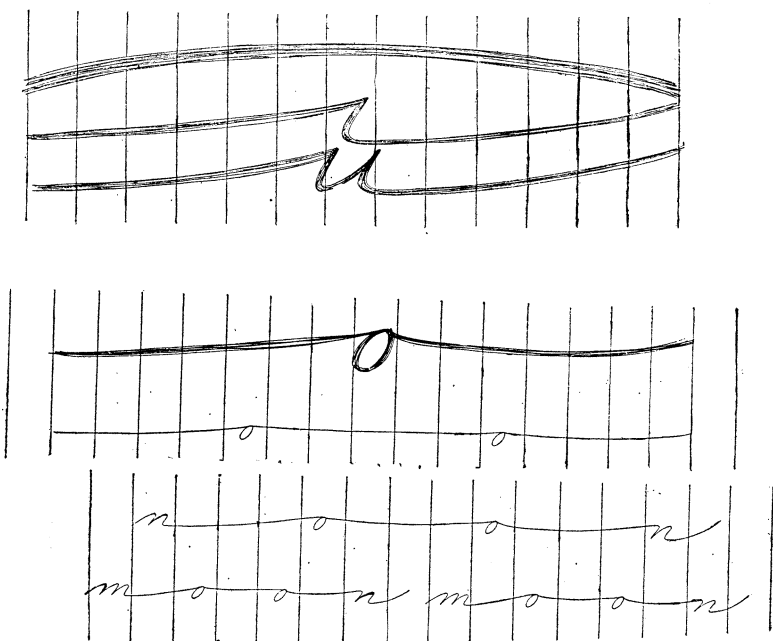


FIG. 7.—Illustrations of exercises with laterally spaced letters. From Houston's *Copy Slips* for Grade III. (Reproduced with the permission of the publisher.)

produced by a combination of the rocking and swinging movement with the downward movement following. This same lateral movement is emphasized in certain drills used by Houston, Berry, and others (see Fig. 7). These drills consist in a succession of letters which are connected by strokes an inch or more long. In such a drill it is necessary to combine smoothly the movement which produces the letters and the movement which carries the hand across the page. Since this touches upon the essential

problem in the development of the writing co-ordination the writer believes that such drills are of the highest importance. The oval and the straight up-and-down stroke are useful to develop an easy, flowing movement, but lose some of their importance if one is not seeking to develop the exclusive arm movement with rest.

Only the commonly used formal drills have been here referred to since more labored forms are a matter for individual choice. A great many drills which consist in retracing letter forms or incorporating into the formation of the letter one of the formal drills, have been devised. These may be useful in compelling the pupil to use a free movement in the production of the letter, but are of less importance than the more formal drills.

*Application of drills to letter-formation.*—The application of the various formal drills to the different letters was touched upon in the description of the order of development of the letters. If this application is made a corresponding order of development will take place in the case of the formal drill. That is, the direct oval may be practiced in preparation for the drill upon the *i*, *u*, and *w*, and the capital letters *O*, *C*, *A*, *G*, *D*, and *E*; the reversed oval may be made the basis for the development of the *n*, *m*, and *v*, and the capital letters *I*, *J*, *P*, etc. Finally the straight up-and-down drill may be used to introduce the *t*, *d*, etc., and the loop drill in connection with the loop letters.

*Rhythm and counting.*—A very important aspect of the teaching of writing hitherto not mentioned is that of rhythm and the means of attaining rhythm. Experimental investigations have shown that one of the main differences between the writing of the child and of the adult is that the latter is very much more characterized by rhythm than the former. That is, the adult tends to write in time as though to music. The successive strokes, though very different in length, tend to approximate each other in time. It has also been shown that the use of an imposed rhythm, that is, the requirement that the child write according to a certain rhythm, tends to unify his writing and render it more mature in character.

This principle has been widely utilized in the teaching of writing. The main question in this connection concerns the rate



of rhythm which is to be used and the manner of counting or of inducing the child to write in a rhythmical fashion.

The advocates of the free-arm movement have performed a good service to the pedagogy of writing by their insistence on the device of counting. They have not been so fortunate, however, in the choice of the rate of rhythm, particularly for the lower grades. As has been already mentioned, the rate of movement which is ordinarily chosen is 200 per minute, and no distinction is made between the different grades. The question of the rate of movement which is adapted to the different grades is easily susceptible of investigation. The writer has undertaken to determine the ability of children of different ages to make up-and-down strokes, with the result shown in the accompanying table. From this table it appears that three children of grade IB made between 70 and 79 double strokes per minute, and so on. (The column in which the median falls in each grade is indicated by printing the number in that column in black face.)

TABLE III  
GROWTH IN RAPIDITY OF GRAPHIC MOVEMENT THROUGHOUT THE GRADES

Grade	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150-159	160-169	170-179	180-189	190-199	200-209	210-219	220-229	230-239	240-249	250-259	260-269	270-279
IB ..	...	3	2	<b>2</b>	I	I	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
IIB ..	I	I	...	...	I	I	I	<b>3</b>	I	I	...	...	I	...	...	...	...	I	...	...	...	...
IIA ..	I	...	...	I	I	3	I	2	<b>2</b>	2	...	...	I	3	I	...	...	...	...	I	...	...
IIIB ..	...	...	I	I	2	3	<b>3</b>	...	...	...	I	I	2	I	I	...	...	...	...	...	...	...
IIIA ..	...	...	...	...	...	...	I	...	...	2	...	I	5	2	<b>5</b>	I	4	...	I	...	I	I
IVB ..	I	...	I	...	I	2	...	<b>2</b>	...	...	I	...	2	...	...	2	...	...	...	I	...	...
IV ..	...	...	...	...	I	2	I	...	2	...	3	3	<b>6</b>	2	3	I	2	...	4	...	...	...
V ..	...	...	...	...	...	I	2	I	...	2	3	I	7	<b>5</b>	2	7	...	I	I	...	I	...
VI ..	...	...	I	...	2	I	4	I	<b>4</b>	4	3	2	2	2	2	...	...	...	...	I	...	...
VII ..	...	...	...	...	...	...	I	I	I	...	3	3	I	<b>5</b>	2	4	3	2	2	I	...	...
VIII ..	...	...	...	...	...	I	I	I	3	4	5	<b>2</b>	I	2	5	3	2	3	...	...	...	...

Several facts appear from this table. In the first place, it is evident that there is wide variation in the ability of children in the same grade to write rapidly. In grades IIA and IVB the fastest child writes more than four times as fast as the slowest. It is clear that some provision must be made for these differences. When the pupils are writing in concert to a rhythm which is

indicated by the teacher they must write at the same rate. When they are writing individually, however, some should write faster and some more slowly than this standard.

In the second place, it is evident that the rate of writing of a grade is influenced by the method of teaching as well as by the maturity of the pupils. Thus Grade IIIA is faster than the preceding and following grades, and Grade VI is slower. The full significance of this fact cannot be known unless the quality of the writing is also measured, but the fact remains.

Finally, in spite of variations among the individual grades, it is clear that there is a gradual increase in speed from the lower to the higher; and, if a uniform method were pursued throughout, this progression would, in all probability, be fairly regular. The particular standards which are suitable for the different grades must be established by more extended trial. A tentative set of standards may be proposed for trial and modification. The units refer to double strokes consisting of an upward and downward straight line with sharp angles at top and bottom. Grade I, 80-90; II-III, 125-50; IV, 175; V, 200; VI-VIII, 225-50. The speed of writing letters is about half as great as the speed of making double strokes.

There is some difference in procedure in the use of counting. The count is ordinarily made upon the down stroke. Sometimes, however, both the down stroke and the up stroke are counted, and in one case, that of the Bennett method, the count is upon the up stroke or the connecting stroke only. We have here a difference in procedure which is likely to have considerable influence upon the type of writing and which deserves attention. It is evident that emphasis will be placed upon the stroke which is made at the time the count is given. The ordinary procedure, then, places the emphasis on the downward stroke, whereas the Bennett method places the emphasis upon the connecting stroke and holds that the downward stroke will pretty largely take care of itself. The writer looks upon this as a very interesting idea but has no basis for judgment as to its merits, except the fact that it emphasizes the forward push of the hand. Since this is the element which is likely to be weak in the writing movement,

it seems possible that a device which will emphasize it may prove worthy of adoption.

The time is ordinarily indicated by counting or by making a series of raps with a ruler, or hand claps, etc. Little, if any, use, so far as the writer knows, is made of music to indicate the time in writing, but the success with which music is used to mark time for marching, dancing, gymnastic exercises, etc., suggests that it would be well worth trying in this case also.

*Style of alphabet.*—The form of letter which is used as a model for the child is of a good deal of interest. There is a very strong tendency for the child to imitate the style of writing which is set before him. This can easily be verified by examining any set of samples of children's writing. They invariably resemble the copy in general style. The importance of this fact does not lie so much in the relative virtue of one form or another in itself so much as in the fact that certain styles of letter are more readily produced than others, and, therefore, involve a better type of movement. That this is so is an indication that the reverse of the opinion which is sometimes held, is, at least to a certain extent, true. The movement is the reflex of the form as much as the form is a reflex of the movement. It is important, then, as suggested in an earlier part of this article, that the letter be such as suggest fluency of movement. The writer believes that this can be best attained by the use of the reproduction of actual writing rather than of copies of engraved letters. See illustrations from the Bennett and the Palmer systems (Fig. 8).

These remarks will indicate the point of distinction of the various forms of alphabet which are used. We may perhaps classify the various styles of alphabet according to their probable ancestry. There are, in general, two strains which may be traced in the various styles. One originated in the Spencerian hand and was modified in the business colleges, and may be called the business or arm-movement style of writing. This writing usually has considerable slant, ranging about 60 degrees, though not so much slant as the Spencerian style. In form, the turns of the letters are relatively sharp and tend to become angular. Some of the systems, as the Bennett method, the Houston Copy Slips, the

Palmer method, etc., which use this style of writing, employ the reproduction of actual writing in their copies. Others, such as Spencer's Practical Writing, the California series, and the Standard Free-hand Writing, use an engraved style of script which suggests the written forms (see Fig. 9).

The other line of development originated in the vertical writing, which marked the introduction of a relatively new style of script.

1. *unable unbend*  
*unpire unship*  
*useless utensil*

<sup>23</sup>  
 2. *unkind use up*  
*urn utter upper*

<sup>25</sup>  
*wind won wonder*  
*was what water*

FIG. 8.—Illustrations of copy reproduced from actual writing. 1. From the Bennett method, Grammar Series. 2. From the Palmer method. (Reproduced with the permission of the publishers.)

This writing was chiefly characterized by the extreme roundness and width of the turns, and hence by the breadth and squat appearance of the letters. These letters were also characterized by extreme simplicity, every possible superfluous stroke being omitted. When the vertical writing was, in general, given up, many systems used the same style of writing but modified it slightly by introducing some slant. Such a style is represented in the Whitehouse system, and Barnes's Natural Slant.

A third group of systems occupy an intermediate position between these two extremes, and almost every degree of difference may be found.

1. *A B C D E F G H I J K L M*  
*N O P Q R S T U V W X Y Z*  
*Always study drill before practicing.*
- 1a. *A B C D E F G H I J K L M*  
*N O P Q R S T U V W X Y Z*  
*The Yukon River is 2000 miles long and.*
2. *A B C D E F G H*  
*I J K L M N O P Q R S T U*  
*V W X 1 2 3 4 5 6 7 8 9 0 Y Z &*  
*Iowa Ivies are climbing plants*
3. *A B C D E F G H I*  
*J K L M N O P Q R*  
*S T U V W X Y Z*  
*Leopards are spotted. Lion.*

FIG. 9.—Illustrations of the three kinds of script. 1. The business, free-hand style; from the Palmer method. 1a. The same style engraved. From the Standard Free-Hand system. 2. Intermediate style from the Medial method. 3. The extremely round and simple style. From Barnes's *Natural Slant Penmanship*. (Reduced to  $\frac{1}{2}$ .) (Reproduced with the permission of the publishers.)

The advantages claimed for the vertical style of letter and its successors are based upon the two points of legibility and economy. The legibility rests mainly on the relatively upright position of

the strokes, and the economy upon the paucity of the strokes which are necessary to write the letters. The advantages upon the side of the opposing style of script are based upon considerations of ease and fluency of movement. The issue between legibility and fluency is clear cut. The writer believes, however, that the style of letter should be chosen on the basis of its adaptability to a fluent movement, rather than primarily on the basis of its legibility, since the legibility of writing depends, not so much upon the ideal which it is supposed to copy, as upon the degree which it approximates the ideal; and it is much more likely to approximate the ideal if it can be made with an easy, fluent movement. In regard to the economy supposed to be effected by lopping off certain of the strokes, such as the beginning up stroke of the *i* and *j*, it is to be said that simplicity of objective form does not necessarily mean simplicity of movement. The pen at the end of a word is usually at the bottom of a stroke. It therefore has to pass from the base line to the top of the letter through the air or upon the paper. Certain experimental results have shown that in similar cases, such as the crossing of the *t* or the *x*, it takes as long for the pen to pass through the air as it would take to make the stroke upon the paper. Furthermore, it is probable that there is more likely to be a considerable pause at the beginning of the stroke when it is started in such fashion as in the case of the letters referred to. It is easier to begin a letter by an introductory stroke so as to get one's bearings, so to speak. This, as well as other similar issues, may well be subjected to experimental investigation for final settlement.

The above principles will indicate without a more specific illustration the general type of letter which is most desirable. Considerable latitude as to details of form and style of letter may exist within the range of letters which meet the general principles laid down. A somewhat rounder and more nearly vertical style of script might well be used in the earlier, than in the later, grades.

*Organization of work for the different grades.*—The principles underlying the organization of the work for the different grades have been referred to in the discussion of the particular methods of teaching. They may here briefly be brought together. The

question of the time of beginning writing in general was touched upon in discussing the replies from the questionnaire. It is held by a number of writers upon the pedagogy of handwriting that the ideal course to pursue, from the point of view of the writing itself, would be to defer the teaching of writing until the second or third year. This, however, appears to be impracticable, and the question remains as to the type of writing which shall be pursued in the different grades. Several of the systems which are under discussion make little or no distinction between the work to be given to the different grades. The courses are organized on the basis of a year's work and the pupil is put through the same work whatever his grade. The most thoroughgoing example of this type of procedure may be seen in the Palmer method. Certain of the other systems vary the work slightly in point of complexity in the different years, but in general repeat the same course. An example of this may be seen in the Steadman method.

On the other hand, the methods which lay little stress upon the movement drills, and which rely on the copy-book, may make little distinction between the work of the successive years, except in the subject-matter of what is written. In such case the first book may begin with one space letters and then introduce the multiple space letters in the course of the book, and defer the capital letters to the end of the first book or the beginning of the second. The size of the letters is usually decreased in the first two or three books. From this point on, longer words and sentences are used, and in the later books various business and social forms are introduced. But the formal side of the writing is very little changed. The chief respect in which a rational system of grading is introduced then, is in the distinction between the type of writing required in the lower and the higher grades, and the extent to which the specific writing instruction is given. Without stopping to detail the variations in method, we may outline a typical curriculum in writing, which aims to meet the different stages of development of the child.

In such a course the aim of writing in the different divisions of the school is radically different. In the primary grades the aim is to develop a fairly accurate perception of the form of the

letters, and the ability to write with some facility, using free and not very precise movements. The writing for the child of these years is mainly a means of expression and not a matter of technical skill. The analogy may be drawn with the development of the child in drawing. The primary child does not draw to reproduce with accuracy the form of objects, but to express in a more or less symbolic way the ideas which he has in mind. In the same way, writing may be made a means of expression without undertaking to develop extreme accuracy.

In the intermediate grades the child should begin the formal drill which will enable him to acquire greater skill and fluency in writing. He is now interested in developing greater accuracy in his manual activities. He realizes the discrepancy between his earlier, rough attempts and the standard which is set before him. He becomes interested in the accurate use of tools and weapons, for the sake of development of skill for its own sake. This is the time, then, when he will be most interested in the formal drill in writing.

This development of skill and facility in the use of the pen should be accomplished, in the main, in two or three years. No particular difference in the type of training to be given in this group of years has been worked out. The best procedure, so far as we have basis for judging, is to determine upon an order of development of the letters and drills which is consistent and progressive, and go through this system in the two or three succeeding years of this period, placing special emphasis upon features which particular classes or individuals find most difficult. At the beginning of this period the form of the writing is likely to deteriorate for the time being. This is not at all a serious matter, and the form will soon improve if the drill is wisely chosen and the speed which is used is not too great.

If the two or three intermediate grades have been well trained, the aim in the upper grades may be merely to review that which has been already attained, and to develop somewhat greater speed and fluency. It is incorrect to assume, however, that the subsequent writing will take care of itself if the earlier training has been correct. It is probably not necessary to spend so much time



upon drill at this time; but two or three short periods a week may profitably be spent in reviewing the drills which have been previously learned. In addition to this it is probably necessary to introduce some motive for the maintenance of careful writing in all the work. This might be done by holding occasional tests and giving grades on the basis of these tests, or by grading the writing which is done in other school exercises. This would emphasize the need of care, not merely in the writing lesson, but also in all written work. Experience shows that not even at the end of the elementary-school period can attention to writing be entirely withdrawn. Occasional drills might profitably be given even in the high-school period, and some attention be given to the excellence of the pupil's general writing.

This course in each part assumes the other parts and is an organic whole. What is said concerning each grade applies only in case the system is carried out throughout the grades. For example, if the training which is described for the intermediate grades is not given, it will be necessary to devote more time and energy to the writing in the upper grades, in order to secure good results. This principle of the organic unity of the whole course has often been flagrantly violated. Pupils have begun under one system and in the middle of their course a new system has been introduced, and it has often been the case in this way that the same person's handwriting has been torn up by the roots and reorganized two or three times. It is to be emphatically said that a relatively poor system carried through consistently is better than a continual shifting from one to the other, and it is to be hoped that the modern attempt to base the discussion of handwriting upon a scientific foundation will prevent the sudden and complete transitions from one extreme to another, which have characterized the past practice.